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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.            | CONFIRMATION NO. |
|---|-------------|----------------------|--------------------------------|------------------|
| 10/721,457  | 11/26/2003  | Yoshinori Yamaguchi  | 117862                         | 8110             |
| 25944   | 7590        | 09/25/2006           |                                |                  |
| OLIFF & BERRIDGE, PLC<br>P.O. BOX 19928<br>ALEXANDRIA, VA 22320 |             |                      | EXAMINER<br>STOCK JR, GORDON J |                  |
|   |             |                      | ART UNIT<br>2877               | PAPER NUMBER     |

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/721,457

Applicant(s)

YAMAGUCHI, YOSHINORI

Examiner

Gordon J. Stock

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 4-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-12,14 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 23 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. The Amendment received on June 23, 2006 has been entered into the record.

#### *Drawings and Specification*

2. Figures 11-15 received on June 23, 2006 have been accepted by the Examiner.
3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: in claim 1: 'the apparatus further including a principal point displacement image unit ... along a direction of the length of the stripe pattern' lacks antecedent basis in the specification (Fig. 10 shows a single shifted principal point input unit (62) without 'at least one image input unit disposed in a position different in principal point from the projector unit' and page 8 lines 17-20 of Applicant's disclosure mentions an embodiment with one shifted principal point input unit without 'at least one image input unit disposed in a position different in principal point from the projector unit').

#### *Claim Rejections - 35 USC § 101*

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. **Claims 14-15** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. In **claims 14-15** the particular measuring a 3d shape (**claim 14**) and particular steps of monitoring and measuring (**claim 15**) are abstractions without a tangible result. Merely 'measuring/monitoring' would not appear to be sufficient to constitute a tangible result, since the outcome of the measuring/monitoring has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical

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application can be realized. See OG Notices: 22 November 2005, "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility".

Specifically: Part b. *Practical Application the Produces a Useful, Concrete, and Tangible Result* under Section IV *Determine Whether the Claimed Invention Complies with the Subject Matter Eligibility Requirement of 35 U.S.C. Sec. 101*, sentence 3, in the OG Notice from 22 November 2005 states 'In determining whether the claim is for a "practical application," the focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but rather that the final result achieved by the claimed invention is "useful, tangible, and concrete."'

#### *Claim Rejections - 35 USC § 112*

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. **Claim 2** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, **claim 2** further comprises an identical principal point image input unit. If Examiner interprets the principal point displacement image input unit as mentioned in **claim 1** as a shifted unit (page 8 lines 17-20 of Applicant's disclosure) or as the image input unit of Fig. 10 (62) then a range finder comprising at least one image input unit, a principal point displacement image input unit, and an identical principal point image input unit is not reasonably conveyed in Fig. 10 or page 8 lines 17-20 of Applicant's disclosure.

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8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. **Claims 1, 2, 4-12, and 14** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As for **claims 1 and 14**, the limitation 'displacing a principal point so that the principal point' is indefinite, for it is unclear as to what principal point is being discussed. Examiner has interpreted this as referring to the principal point of the image input unit as mentioned in Fig. 10 (62) and page 8, lines 17-20 of applicant's disclosure. **Claims 2, 4-12** are rejected for being depended upon a rejected base claim.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Marschner et al. (2005/0089199)**—previously cited in view of **Halioua et al. (4,641,972)**—previously cited.

As for **claim 14**, Marschner discloses the following: projecting linearly polarized light onto a subject (Fig. 11: 1102 and 1104 with 1106 and 1110 to 1112); selecting light having a polarizing selection from light reflected by the subject (Fig. 11: 1108); capturing reflected images based on the selected light at a position different from the position of the principal point of the projecting of the linearly polarized light wherein the principal point of the camera is

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displaced and the principal point of the projectors and the principal point of the camera are along a direction of a length of the projected light (Fig. 11: 1102, 1100, 1104 are substantially co-linear); measuring a 3d shape of the subject based on the reflected image (paragraphs 0049, 0050, 0111). Marschner is silent concerning light with a plurality of stripes, a stripe pattern, encoded by use of the linearly polarized light being projected. However, he does mention using a structured pattern to illuminate the subject being investigated (paragraph lines 12-17). And Halioua in a surface profilometry system teaches using a plurality of stripes to determine a profile (Fig. 10 ; col. 1, lines 10-17). Therefore, it would be obvious for one of ordinary skill in the art at the time the invention was made to have light with a plurality of stripes illuminate the subject being profiled for image analysis and pattern recognition to determine the subject's 3d shape.

*Allowable Subject Matter*

12. **Claim 13** is allowed.

**Claim 15** would be allowable if rewritten to overcome the rejection under 35 U.S.C. 101 above.

As to **claim 13**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a range finder the 'an identical principal point image input unit' and 'at least one nonidentical principal point image input unit' in combination with the rest of the limitations of **claim 13**.

As to **claim 15**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a 3d image acquired method the particular monitoring step, in combination with the rest of the limitations of **claim 15**.

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Due to the indefinite nature of **claims 1, 2, 4-12** as mentioned in the rejection under 35 U.S.C. 112 second paragraph and due to the objection to the drawings in regards to **claims 1, 5, 6, 9, and 10**, Examiner has not indicated any allowable subject matter for these particular claims.

***Response to Arguments***

13. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. Examiner apologizes for the inconvenience but upon further consideration rejections under 35 U.S.C. 112 second paragraph and 35 U.S.C. 101 were made. As for the arguments regarding the previous objection of the drawings lacking claimed subject matter in **claims 5, 6, 9, and 10**, the Examiner finds the arguments persuasive. Subsequently, the previous objection to the drawings has been withdrawn.

***Fax/Telephone Numbers***

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

*Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (571) 273-8300*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

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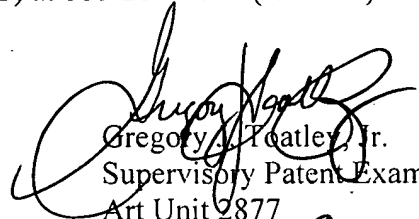
The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gs  
September 13, 2006



Gregory J. Toatley, Jr.  
Supervisory Patent Examiner  
Art Unit 2877  
18 Sept 06